

*Interoperable Software for the 21<sup>st</sup> Century:*

*The DOE 2000 Program*

*James R. McGraw*

*Lawrence Livermore National Laboratory*



## *DOE 2000 Vision*

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*Accelerate the ability of DOE  
to accomplish its mission  
through advanced computing  
and collaboration  
technologies.*



## *DOE 2000 Objectives*

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- *Improved ability to solve DOE's complex scientific problems*
  - » *Multi-discipline*
  - » *Multi-organization*
  - » *Replace hard-to-do experiments*
- *Increased R&D Productivity and Efficiency*
  - » *Better integration of distributed centers of expertise*
  - » *Better access to unique instrumentation and facilities*
  - » *Better problem solving tools*
- *Enhanced access to DOE resources by R&D partners*
  - » *Access to facilities*
  - » *Access to computational tools*



## *DOE 2000 Components*

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- *National Collaboratories*

*explore and develop laboratories without walls which unite expertise, instruments, and computers, enabling scientists to carry out cooperative research independent of geography*

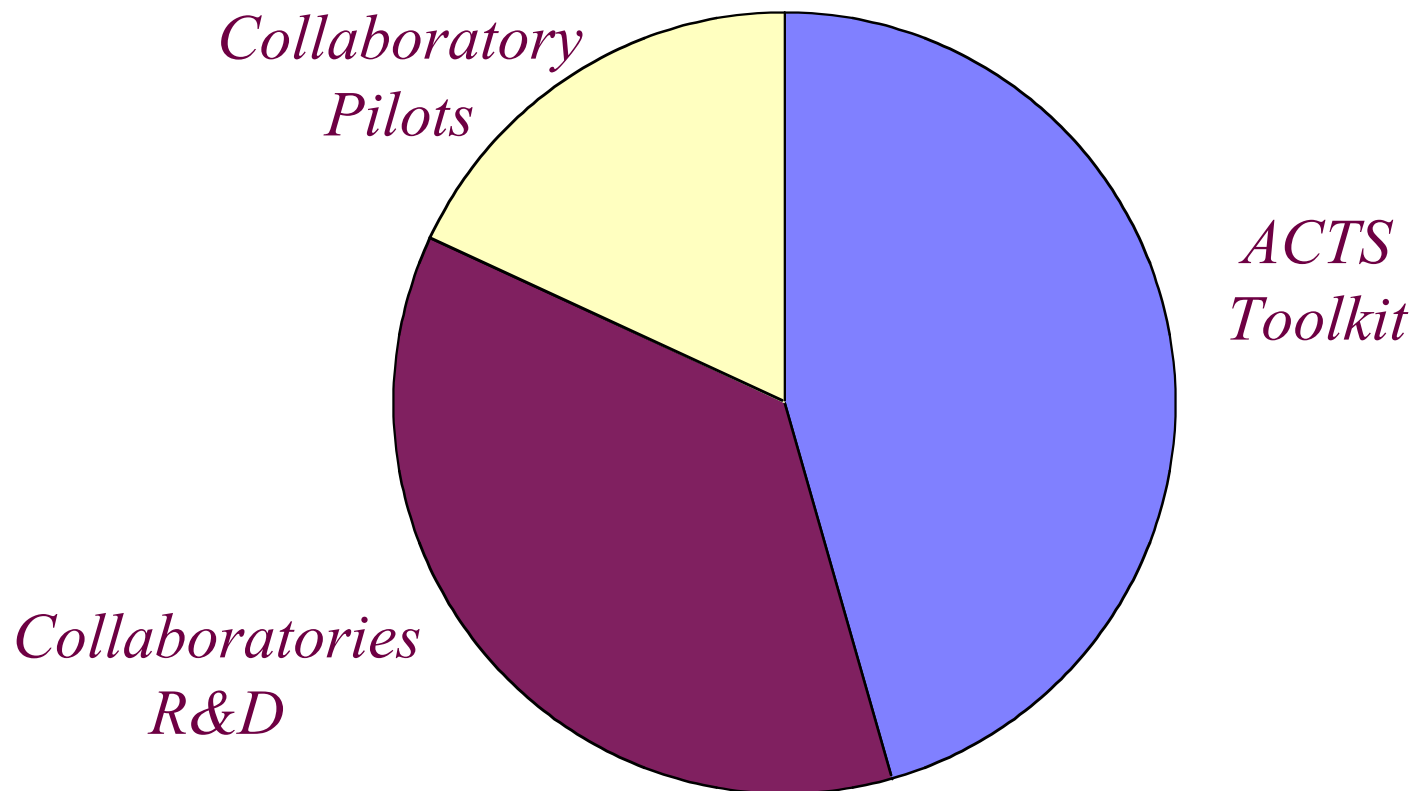
- *Advanced Computational Testing & Simulation (ACTS) Toolkit*

*integrated set of software tools, algorithms, and environments that accelerate the adoption and use of advanced computing for mission-critical problems.*

## *DOE 2000 FY 98 Budget*

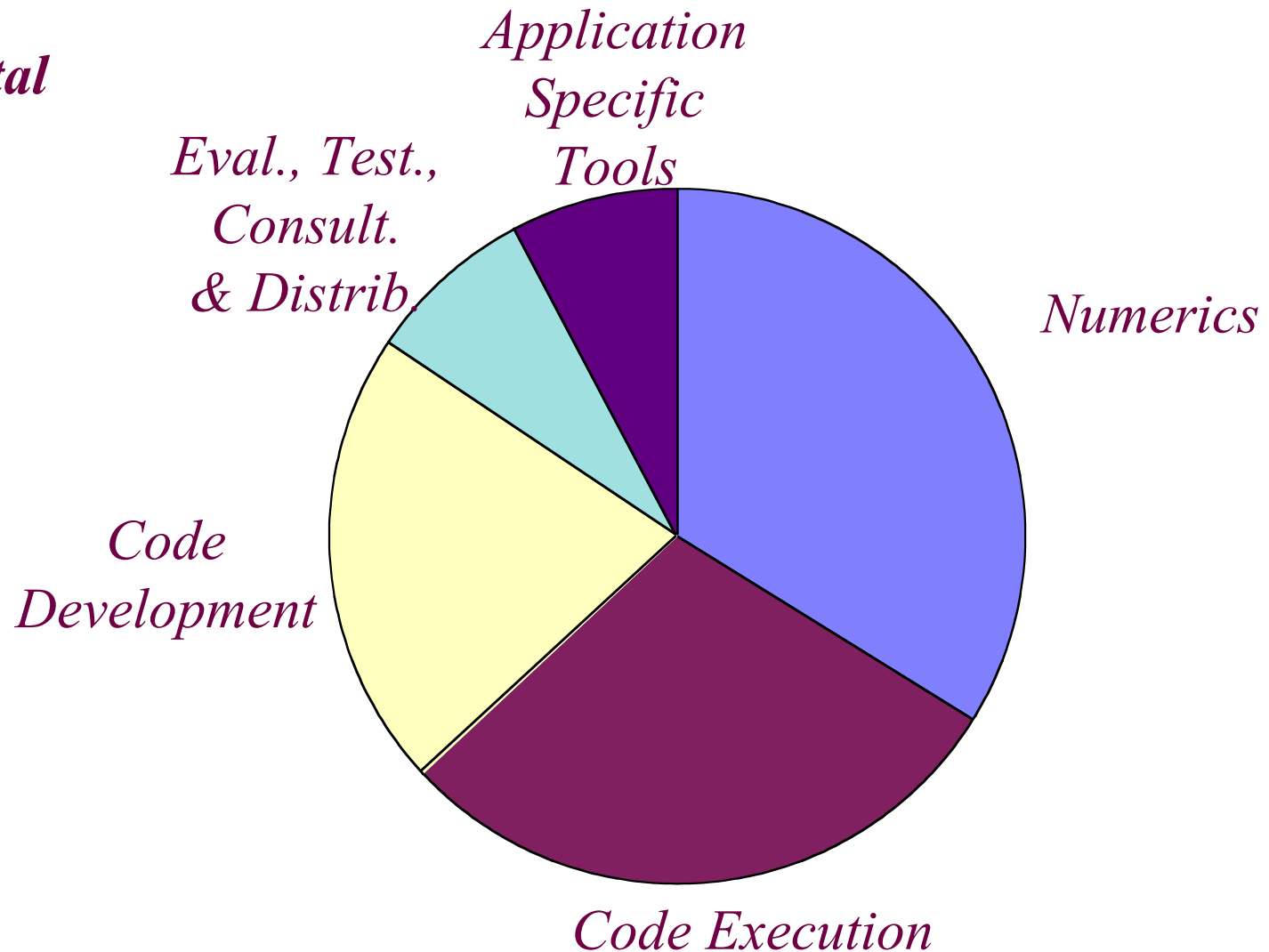
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*\$ 11 M total*



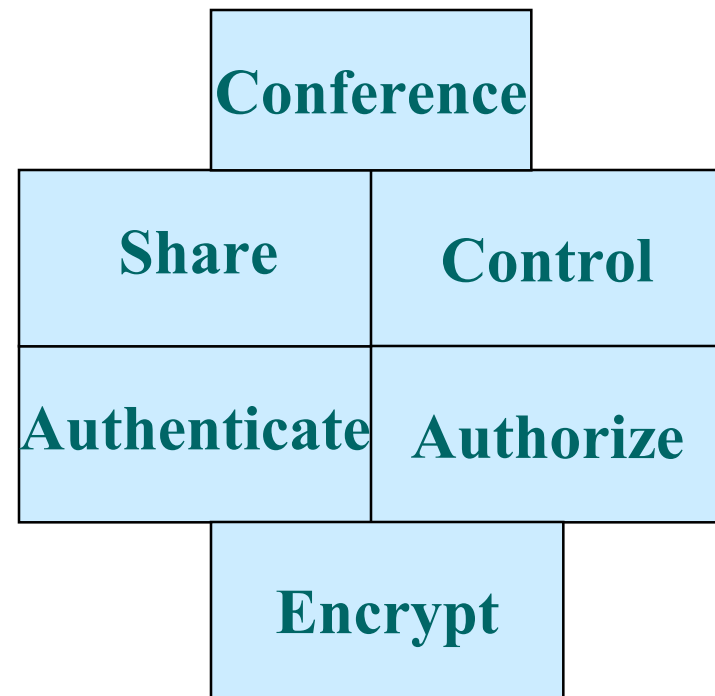
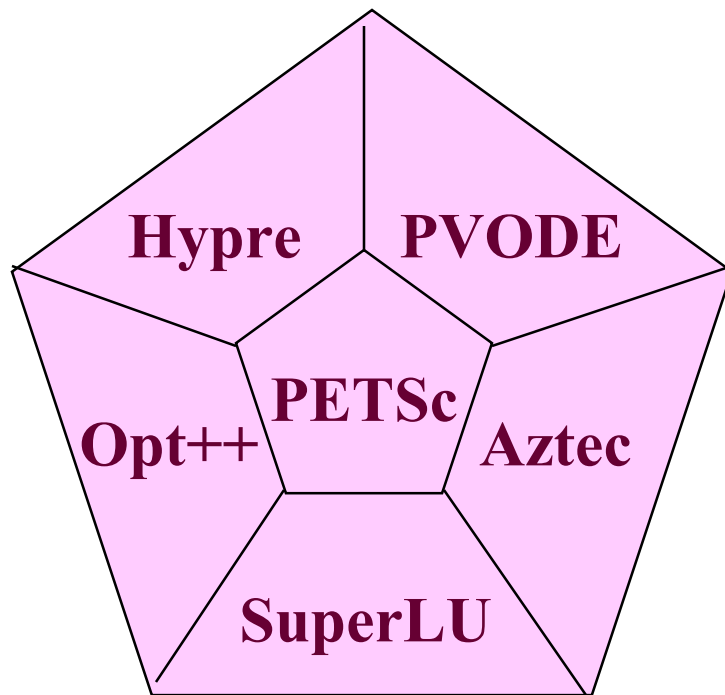
## *ACTS Toolkit Budget*

*\$ 5 M Total*



## *Overarching Theme: Interoperability*

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## *Session Agenda*

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- *Numerics Capabilities* *Barry Smith*
- *Parallel Programming Tools* *Rod Oldehoeft*
- *Break*
- *Electronic Notebooks* *Al Geist*
- *Remote Control of Experiments* *Deb Agrawal*
- *Questions and discussion*



## *Final Thoughts*

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- *A different model for cooperation*
- *Work and collaborations just beginning*
- *Results will drive future funding*
- *Much more work to be done*



## *For More Information*

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- *Web Pages:*

- » *Overview:*            [www.mcs.anl.gov/DOE2000/](http://www.mcs.anl.gov/DOE2000/)

- » *ACTS Toolkit:*   [www.nerisc.gov/ACTS/](http://www.nerisc.gov/ACTS/)

- *Technical Contacts:*

- » *Collaboratories:* *Stu Loken* -    [SCLoken@lbl.gov](mailto:SCLoken@lbl.gov)

- » *ACTS Toolkit:*   *Jim McGraw* - [JMcGraw@llnl.gov](mailto:JMcGraw@llnl.gov)